WHAT IS CLAIMED IS:

1. An apparatus, comprising an infrared detector with a plurality of detector elements that each include:

an amorphous silicon portion which has a selected temperature coefficient of resistance; and

first and second electrodes which are electrically coupled to said amorphous silicon portion at spaced locations thereon, said electrodes and said amorphous silicon portion having a structural configuration which is selected to provide between said electrodes through said amorphous silicon portion at a given temperature a resistance which is selected substantially independently of said temperature coefficient of resistance.

2. An apparatus according to Claim 1,

wherein said amorphous silicon portion has a level of doping selected to provide said amorphous silicon portion with said selected temperature coefficient of resistance; and

wherein said structural configuration of said electrodes and said amorphous silicon portion is selected to set said resistance substantially independently of said doping level.

3. An apparatus according to Claim 1, wherein said first and second electrodes are made of a material which absorbs thermal energy, are in thermal communication with said amorphous silicon portion, and are sufficiently thin so that they are substantially absorbing to infrared radiation.

4. An apparatus according to Claim 3, wherein said electrodes are made from an alloy which includes aluminum and titanium.

5. An apparatus according to Claim 3, wherein said electrodes are made from an alloy which includes approximately equal amounts of aluminum and titanium.

6. An apparatus according to Claim 1, wherein said infrared detector includes an integrated circuit, a membrane having therein an amorphous silicon portion and said electrodes, and structure which supports said membrane at a location spaced above said integrated circuit and which electrically couples each of said first and second electrodes to said integrated circuit.

7. An apparatus according to Claim 6,

wherein said integrated circuit has thereon below said membrane a reflective surface which reflects infrared radiation; and

wherein a distance between said reflective surface and said membrane is selected as a function of infrared wavelengths of interest, so that a region between said membrane and said reflective surface will serve as a resonant cavity for said wavelengths of interest.

8. An apparatus according to Claim 7, wherein said membrane has therethrough a plurality of openings.

9. An apparatus according to Claim 8, wherein said openings each have a transverse dimension which is approximately twice said distance.

10. An apparatus according to Claim 1, wherein said amorphous silicon portion is a layer having each of said first and second electrodes on one side thereof.

11. An apparatus according to Claim 10, wherein said first and second electrodes have interdigitated fingers.

12. An apparatus according to Claim 10, including a third electrode on a side of said amorphous silicon layer opposite from said first and second electrodes, said third electrode having respective portions which are each aligned with a respective one of said first and second electrodes.

13. An apparatus according to Claim 10, including spaced first and second layers made of a material which is electrically insulating and substantially transparent to infrared radiation, said amorphous silicon layer and said electrodes being disposed between said first and second layers.

14. An apparatus according to Claim 1, wherein said amorphous silicon portion is a layer having said first and second electrodes on opposite sides thereof in alignment with each other.

15. An apparatus according to Claim 14, including spaced first and second layers of a material which is electrically insulating and substantially transparent to infrared energy, said amorphous silicon layer and said electrodes being disposed between said first and second layers.

16. A method of making an infrared detector having a plurality of detector elements, comprising the steps of:

providing an amorphous silicon portion which has a selected temperature coefficient of resistance; and

fabricating first and second electrodes which are at spaced locations on said amorphous silicon portion and which are electrically coupled to said amorphous silicon portion, including the step of structurally configuring said electrodes and said amorphous silicon portion so as to provide between said electrodes through said amorphous silicon portion at a given temperature a resistance selected substantially independently of said temperature coefficient of resistance.

17. A method according to Claim 16,

wherein said step of providing said amorphous silicon portion includes the step of doping said amorphous silicon portion to a level which provides said selected temperature coefficient of resistance; and

wherein said step of configuring said electrodes and said amorphous silicon portion is carried out so as to set said resistance substantially independently of said doping level.

18. A method according to Claim 16, wherein said step of fabricating said electrodes includes the steps of forming said electrodes from a material which absorbs thermal energy and which is in thermal communication with said amorphous silicon portion, and forming said electrodes to be sufficiently thin so that they are substantially absorbing to infrared radiation.

19. A method according Claim 16, further including the steps of:

supporting at a location spaced above an integrated circuit a membrane which has therein said amorphous silicon portion and said electrodes;

electrically coupling said electrodes to said integrated circuit;

providing on said integrated circuit below said membrane a reflective surface which reflects infrared radiation, wherein a distance between said reflective surface and said membrane is selected as a function of infrared wavelengths of interest, so that a region between said membrane and said reflective surface will serve as a resonant cavity for radiation having said wavelengths of interest; and

forming a plurality of spaced openings through said membrane.

20. An apparatus, comprising an infrared detector with a plurality of detector elements that each include:

a thermally sensitive portion having a resistance which varies with temperature; and

a thermal absorber portion which absorbs infrared radiation, which is in thermal communication with said thermally sensitive portion, and which is made of an alloy that includes titanium and aluminum.

21. An apparatus according to Claim 20, wherein said absorber portion includes first and second electrodes which are electrically coupled to said thermally sensitive portion at spaced locations thereon, which each absorb infrared radiation, which are each in thermal communication with said thermally sensitive portion, and which are each made of said alloy.

22. An apparatus according to Claim 21, wherein said thermally sensitive portion is made of amorphous silicon.

23. An apparatus according to Claim 20, wherein said alloy is approximately one-half titanium and approximately one-half aluminum.

24. A method of making an infrared detector having a plurality of detector elements, comprising the steps of:

providing a thermally sensitive portion having a resistance which varies with temperature; and

fabricating a thermal absorber portion which absorbs infrared radiation, which is in thermal communication with said thermally sensitive portion, and which is made of an alloy that includes titanium and aluminum.

25. An apparatus according to Claim 24, wherein said step of fabricating said absorber portion includes the step of fabricating first and second electrodes which are electrically coupled to said thermally sensitive portion at spaced locations thereon, which each absorb infrared radiation, which are each in thermal communication with said thermally sensitive portion, and which are each made of said alloy.

26. An apparatus according to Claim 25, including the step of selecting amorphous silicon for use as said thermally sensitive portion.

27. An apparatus according to Claim 24, including the step of formulating said alloy to be approximately one-half titanium and approximately one-half aluminum.